

ABSTRACT

The invention is an electronic device used to prevent electrical shock to users of arc welding equipment. The device utilizes the electrical power supplied by the welder, it has no internal power supply. The unit is designed with a high
5 amperage SCR, connected between the welder and either the electrode holder or the work-piece. A control circuit is situated in parallel with the SCR and is used to control the SCR. The control circuit constantly monitors the status of the electrode. A high resistance between the electrode and the work-piece causes the unit to revert to an off condition preventing electrical power from reaching the electrode. Upon
10 striking the electrode against the work-piece, the control circuit detects the internal voltage drop that occurs within the control circuit and then outputs an appropriate signal to cause the unit to switch to an on condition. The predetermined resistance value is set to 40 ohms or less. This level of resistance is required to prevent electrical shock to a wet human body when the electrode and work-piece may be
15 contacted simultaneously. A small ground wire is connected between the unit and the ground of the welder to provide an electrical ground for the control circuit. The welder must be a DC welder, either stationary or mobile, and it can be operated in either reverse polarity or straight polarity position.